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DEFINITION AND SPECIFICATION OF MEANING[1]

THE process by which a term is introduced into discourse or by which the meaning of a term already in use is more exactly specified, may be called *specification of meaning*. This process is ordinarily explicated by the concept of definition—a logical equivalence between the term defined and an expression whose meaning has already been specified. That this procedure is not always a satisfactory treatment of specification of meaning was pointed out by Carnap in his "Testability and Meaning," where he developed the concept of "conditioned definitions" or reduction sentences.[2] This concept was elaborated primarily to meet the paradox of material implication when it enters into definitions of the ordinary sort. But there are more general considerations pointing to the inadequacy of definition as a treatment of specification of meaning.

Definitions construe science and its language not as processes of inquiry and communication, but only as the outcome of these processes at some particular stage. In fact specification of meaning is processive; it is hypothetical and provisional, and undergoes modification as inquiry proceeds. The concept of definition does not in itself provide a logical account of this modification. Moreover, "the" process of inquiry is an abstraction from particular inquiries, so that a given concept has various meanings in different contexts—meanings not related to one another as logical equivalents, but empirically coinciding to a greater or lesser degree.[3] It follows that one can not speak of "the" meaning of a concept as it actually functions in inquiry. But just such a determinate reference is assigned to it in the definitional representation of the language of science. Every concept is purported to be defined in one particular way and no other.

So long as the representation is in abstract and general terms, the procedure seems to be satisfactory. But serious problems arise when the attempt is made to give the representation

[1] The material in this paper originated in the course of discussions with Prof. H. D. Lasswell.

[2] *Philosophy of Science*, Vol. 3 (1936), pp. 419–471, and Vol. 4 (1937), pp. 1–40.

[3] The problem of what makes it "the same concept" in all these cases will be considered below.

specific content from some particular field of inquiry. The formulation of a definition for any empirical concept satisfactory to all investigators employing the concept is notoriously difficult. And this difficulty, it is here suggested, is due, not to a psychology of captiousness, but to the logical requirements of the varying contexts in which the concept functions.

Let us take a single example, the biological concept of species. J. S. Huxley, in a book on problems of systematization and classification in biology, observes:

> There is no single criterion of species. Morphological differences; failure to interbreed; infertility of offspring; ecological, geographical, or genetical distinctness—all these must be taken into account, but none of them singly is decisive. . . . A combination of criteria is needed, together with some sort of flair. With the aid of these, it is remarkable how the variety of organic life falls apart into biologically discontinuous groups.[4]

Another biologist writes in the same volume:

> As a definition of species . . . I would suggest something on the following lines, and analogous definitions could be constructed for other categories. "A species is a group of individuals which, in the sum total of their attributes, resemble each other to a degree usually accepted as specific, the exact degree being ultimately determined by the more or less arbitrary judgment of taxonomists." Admittedly this definition, based as it is on resemblance in total attributes, is a very vague one, but any attempt to define a species more precisely in terms of particular attributes breaks down.[5]

Clearly, the function of the concept does not depend on its having been *defined,* if there has been a specification of its meaning in some other form than a definition. The argument that the fact that no satisfactory definition of "species" can be found shows only how "hopelessly vague" the concept is, but not that meanings can be specified otherwise than by definition, loses force when confronted with the multitude of important concepts in other fields of inquiry which have proved equally impossible to define once for all. To reply that inquiry in these fields is not "genuinely scientific" simply side-steps the problem, of course. Inquiry *is* going on in these areas; and how it proceeds with undefined concepts is surely a matter to be explicated.

[4] *The New Systematics,* ed. by J. S. Huxley, Oxford, 1940, p. 11.

[5] J. S. Gilmour, "Taxonomy and Philosophy," *ibid.,* pp. 468–469. It is interesting that considerations of biological concepts led Bergson to criticize the application to them of what he called "static definitions," which "automatically settle" in any particular case questions of classification. The group, he urges, "must not be defined by the possession of certain characters, but by its tendency to emphasize them" (*Creative Evolution,* Chap. 2). The present considerations, however, do not rest on any special features either of the subject-matter or of the concepts of biology. Equally striking examples could be found in other fields of inquiry.

It may be said that the use of definitions in the rational reconstruction of the language of science does not involve a denial that all terms of empirical reference are vague to a greater or lesser degree, but only constitutes an idealization of what is actually found. The question being raised, however, is, Of what is definition an idealization? What are the processes of specification of meaning which approximate the logical character of definition? And how is this approximation made closer? [6]

No attempt is made here to answer these questions, i.e., to develop an explicatum for "specification of meaning" which would clarify the matters not explicated by the concept of definition. Let us call such an explicatum a *theory of specification,* "definition" thus being only a special form of specification. The following paragraphs do not constitute a theory of specification, but are intended only to suggest some matters which might be taken account of in such a theory.

Whenever a term is introduced into a context of inquiry—whether *de novo* or extended from some other context—situations (pertaining to the new context) are described in which the term may be applied. Any such description may be called an *indicator* for the term. But the term is not in general logically equivalent to any or all of its indicators; they assign to the application of the term under the described conditions, not a logical certainty, but only a specified weight.[7] Thus, failure to interbreed is an indicator for distinctness of species; but that two animals do in fact interbreed does not logically entail that they belong to the same species, but only adds some weight to the assumption.

Such weights are not specified quantitatively, but they are ordered, at least with regard to other indicators for the same term. The weight which an indicator assigns to the application of a term is often called the *reliability* of the indicator. In the example, infertility of offspring is a more reliable indicator of distinct species than differences in phenotypic characteristics; geographical

[6] The problem to be solved with regard to idealization is analogous to that for which, in the case of geometry, Whitehead developed his theory of extensive abstraction. The application of "ideal" points and lines to experiential objects is explicated in terms of properties of regions which are not themselves "ideal."

[7] The term "weight" is used here in the sense of degree of confirmation; whether in a theory of specification it would be explicated in terms of statistical probability or of purely logical concepts would depend, presumably, on its explication as applied to confirmation of hypotheses. Reduction sentences, on this basis, would also be only special types of indicators, since the conditions they specify give the application of the term maximal weight. What is being suggested here, in short, is that indicators be formulated in terms of some type of probable implication.

distinctness is perhaps less reliable, and so on. In general, one indicator may be said to be more or less reliable than another for the same term, even though it be impossible to compare the reliability of indicators for different terms. (Without such "internal" comparisons, it would be impossible to improve the reliability of indication, as is in fact constantly being done.) Thus, just as semantical rules of the familiar sort specify the meaning of a sentence by giving the conditions under which the sentence would be true, the indicators specify a more or less indefinite meaning by giving conditions under which the term is likely to apply. (We shall consider below how the meaning is made less indefinite.)

There may, of course, be negative indicators specifying situations to which the term is likely not to apply. In general, the negation of a positive indicator is a negative indicator but of different weight than the positive. A test may be highly sensitive to the presence of a particular property, but may sometimes react even in its absence; it would then be a highly reliable negative indicator, but not as good a positive indicator. Or, to take an example of the converse, two animals that closely resemble one another phenotypically (as do, say, two dachshunds) may reliably be presumed to belong to the same species; but that two animals belong to *distinct* species is less reliably indicated by phenotypical *differences*.

A set of indicators may therefore be exhaustive but nevertheless incomplete if their reliabilities are less than maximal. P may assign to the application of the term T a weight w, and *not-P* to the application of *not-T* a weight v; some meaning is thereby specified for T for all cases (every situation is either P or *not-P*). But the set is incomplete in so far as w or v or both could be made higher by other indicators.[8] Thus, to delimit a particular species one could specify maximal differences in a number of bodily characteristics—size and shape of head, legs, tail; color and markings; length of hair; etc., etc. If the differences in these characters exceed the specified maximum, the animals compared are to be classed in distinct species, and if not, they are not. Such a delimitation is, logically, complete—it can be applied in all cases. But the specification of meaning is incomplete in that further indicators can increase the reliability of a classification made on this basis alone.

The specification of indicators for a term is not in itself sufficient for the use of the term. The indicators describe situations

[8] Since reduction sentences correspond to maximal weights, they are complete when exhaustive. Hence bilateral reduction sentences, as exhaustive pairs are called, can be replaced by definitions if their initial condition is universally satisfied.

to which the term probably applies, but given a sentence in which the term occurs, we can not *deduce* characteristics of the situation described: a *reverse* weight for these indicators must be separately specified. Such reverse specifications may be called *references* of the term. Thus, a proposition about species can be interpreted as making reference to morphological differences, to genetic or geographical distinctness, to phenotypic differences, and so on. All these references are involved in varying weights (degrees of relevance). The weights of the references will obviously differ in different contexts of inquiry, and need not correspond to the weights of the indicators. For a particular problem, P may be the most reliable indicator of T, but some other property Q may have a higher weight as a reference of the hypotheses concerning T formulated to solve the problem. In Darwin's investigation of the distribution of species, geographical distinctness had perhaps a high weight as an indicator, but the reference of "species" in the resultant hypotheses was more to genetic and morphological distinctness.

The weight of a reference depends, not just on the weight of the corresponding indicator, but on the weights of the entire set of indicators. A particular indicator may be more reliable than others but occur less frequently or under more limited conditions, so that its weight as a reference will be correspondingly less as compared with other references.[9] The set of references and the set of indicators thus coincide, but the corresponding weights in general differ from one another. It is this difference, indeed, which requires the distinction between indicators and references. The distinction can not be made in the case of definition because logical equivalence is symmetrical. The specification of a meaning consists, therefore, of weighted indicators and references both.

The references can not be *substituted* for the term whose meaning is specified, any more than could the term for its indicators. The transition from a proposition containing the term to one containing only its references is not, as in the case of definition, an immediate deduction, but one in which the premise gives the conclusion only some weight or other. But the term is useful even though (perhaps one should say *because*) it can not be eliminated with strictness and certitude. It provides a linkage among its set of indicators (or references) as a whole.[10] It embodies, in fact,

[9] The situation is thus similar to that dealt with in Bayes' theorem, and might perhaps turn out to be explicable in those terms.

[10] Something of this sort, perhaps, is intended by Kurt Lewin and others in speaking of "intermediate constructs." On the present account, all concepts are intermediate constructs; this involves a regress, but not a vicious one.

a propositional content: that the members of this set are positively correlated with one another. The term is applied and refers to a variety of situations which do not necessarily all exhibit some single common character, but a number of distinct characters empirically related to one another. From this standpoint, the term "species" —to pursue the example—is not eliminable from the language of biology.[11] Its introduction does not constitute merely a convenient shorthand for more cumbersome locutions, but marks an advance in biological theory—that the various characteristics serving as indicators and references of the concept have an empirically significant relatedness: problems of biology can be formulated and solved in terms of this relatedness.

Specification of meaning is thus hypothetical throughout, the hypothetical element lying not so much in whether a particular specification will accord with a given usage, but in whether it will accord with linkages in the phenomena to be comprised in the meaning. For while the weight of any single indicator can be fixed by stipulation, that for a set can not be so stipulated. It is fixed by the empirical relations holding among the separate indicators. For instance, if infertility of offspring is stipulated as an indicator of high weight for distinctness of species, and certain morphological differences have a high positive correlation with such infertility, this correlation fixes a lower limit to the weight of morphology as an indicator of distinct species. Similarly, the weight of a compound indicator—for instance, infrequent *and* sterile offspring—depends not only on the weights of its components, but also on the empirical relations between these components. If the components are not independent, the compound indicator may have only a slightly higher weight, if at all, than either singly.

Specification of meaning thus has both a conventional and an empirical aspect; the situation is like that of the delicately balanced constructions by Calder, in which the artist is free to add or remove weights wherever he pleases, but must make compensating changes to maintain the balance. The specification results from a decision as to meaning, but, as Reichenbach has emphasized, a particular decision may entail others as a consequence of empirical interconnections.

Thus the specification at any stage is a provisional one, both as to the indicators included, and the weights associated with them. We begin with indicators by which the initial partial extension

[11] This is not to say, of course, that biology will never be able to do without the term, but only that its *present* functions do not allow for its elimination.

of the term is selected, and in terms of which the initial context of application can be confirmed. As the context of application grows, the specified meaning grows—and changes—with it. The stipulation of new indicators affects the weights of the old ones, while they in turn limit the range of choice in the stipulation. The adequacy of a particular indicator is not judged by its accordance with a pre-determined concept; the new and old indicators are appraised conjointly.

The fact that a particular concept is sometimes "defined" in one way and sometimes another can also be formulated in these terms. It is not ordinarily *defined* at all, but its meaning is specified by a set of indicators. In different contexts, different indicators are stipulated to have a certain weight, the weight of the others being empirically limited in relation to these. Those stipulated thus have a logical status akin to a definiens; their relation to the term whose meaning is specified is a matter of decision, and not subject to disconfirmation. The point being made is that this status is functional and contextual. It is not being denied that there is any difference between propositions of a logical and of an empirical purport, but only that the distinction can be applied in abstraction from the way in which the proposition is used in specific contexts of inquiry.[12]

An explicatum of specification of meaning along the lines discussed would thus take the acknowledged vagueness of all terms directly into account. The designation of a term would not in general be represented as a well-defined area, but as an open set of regions overlapping to a greater or lesser degree, each indicator determining one such region. The meaning of this term would correspond neither to the logical sum nor product of these regions, but to the pattern as a whole. The designatum, to paraphrase Claude Bernard's famous dictum about disease, is not an entity but a complex of symptoms. It is made clear, not by a precise definition, but by a specification of the characteristic syndrome.

The "sameness" of a concept employed in different contexts of inquiry (or communication) would thus be explicated, not by the constancy of a single reference, but by the pattern of its references. It is like the "same face" in the members of a family; the familial resemblance is constituted, not by similarity in some one feature, but in the general cast of features. Every term desig-

[12] The question, for instance, whether "f equals m.a" is a definition of force or an empirical law of motion obviously makes no sense without further data as to its occurrence. What is suggested here is that the rational reconstruction of the language of science take account of its occurrence in both forms rather than choosing only the one or the other.

nates in this sense a "family of meanings."[13] The inevitable vagueness of the term results from this dispersion of its reference.

This dispersion is reduced, and the meaning of the term brought into sharper focus, as the reliability of the indicators is improved and the degree of their overlapping increased. This degree of overlapping may be called the *congruence* of the indicator set. At each stage the attempt is to specify the meaning in a way which will maximize both reliability and congruence. The addition of more and more reliable indicators may necessitate rejection of some old ones to preserve congruence; indicators which lower congruence may nevertheless be adopted to increase reliability. In a limiting case, indicators are subdivided into two or more groups, each of higher congruence and reliability than the original set. We say that the term was ambiguous, and specify distinct meanings.

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NATURE, KNOWLEDGE, AND MYTH. II[1]

EXPEDIENCY, then, suggests that scientific knowledges, taken as an historical accumulation, provide the most available funds of claims for epistemological examination. Unable to select amid the multitude of such claims, the epistemologist may elect to look at the sets of such claims as providing an inexhaustible supply of samples. He may then ask: what appears to be the general features of these claims? They purport to refer to something beyond the claims. They purport to report that something exists and to report what that something is. The reports are made available by means of symbols. The epistemologist might ask where the conductors get the stuff out of which they make the symbols. Seemingly the reports as such are distinguished from the existents reported about. "The companion of Sirius is a star of extraordinary density"—but this report is not itself this white dwarf star. At least the astronomer might do either one of two things in response to a question concerning the matter: he might point to a book, or he might adjust his telescope and declare that it is set on the companion of Sirius. In response to questions, the astronomer might aver that what the symbols report has something to do with the nature of the star. The star,

[13] The term is Wittgenstein's; whether its present use is one intended by him is of course another question. Compare also William Empson's notion of a "body of meaning, continuous in several dimensions," as developed in his *Seven Types of Ambiguity*.

[1] Continued from preceding issue, pp. 253–266.

he might say, is natured in such a way that to say it is extraordinarily dense is to say something about the star's nature. The star is, and is what it is, and to be what it is means to possess extraordinary density. A distinction appears to be made between "that it is" and "what it is." Doubtless, if metaphysics be possible, it will reckon with this distinction. For the moment, however, the epistemologist, since he is merely looking at claims, apparently must accept the fact that the distinction seems to be involved in claims. For the sake of brevity of words, let us say that the claims appear to say that existents are, and are natured, and that claims report the natures of natured existents. Nature might be taken as a term to signify the entire set of natures involved in the totality of claims, or to signify the entire set of natured existents. Perhaps there are said to be natures which are not natures at all, and consequently are pseudo-natures. Perhaps there are claimed to be natured existents which do not exist at all, or, what may amount to the same thing, are natured but not by the natures attributed to them. In any case, it appears that claims are at least communicated by means of symbols; that they refer to existents and purport to report the natures which are said to be possessed by the existents, and make the existents what they are. It may be that the tripartite distinction, of natures, symbol, and natured existent, can be somehow reduced to a dual distinction; it may be that the tripartite distinction can be made intelligible in several different ways; but at the moment it would appear that the epistemologist, beginning by looking at claims, must accept the tripartite distinction.

A survey of claims suggests that the conductor labors under constraints. Claims conflict. Other claims are advanced to replace the conflicting claims, or to resolve the conflict by harmonizing them. Claims reporting the natures of existents seem to depend upon other and further reports. Claims are re-submitted for re-testing in and by inquiry activity. It is even the case that claims are made concerning the powers and limitations of the instruments and devices said to be employed in inquiry. Claims come and go, are compared and contrasted, are selected and conserved or are rejected. Conductors dispute. The claims, then, suggest constraints, controls. What are these? It appears that conductors must bow to certain requirements, of an especial sort: these may be called logical because they are of the kind that conductors of inquiry concerned with "logic" make claims about. But control arising from such sources may be left to the logician. This seems a safe thing to do, since even the epistemologist—indeed the logician—presumably works under these requirements.

Parenthetically, this may supply a first approximation to a definition of the conductor: an inquiry conductor is a thing whose activities, *qua* conductor, are subject to requirements that logic-inquirers profess to know about. But existential inquiry conductors, in view of the claims they produce, seem to operate under other controls as well. What are these controls?

Inquiry activities, it has been conceded, are events occurring within a network of events. Since claims refer to many things other than the conductor thing—although there are sets of claims which profess to refer to the conductor thing—it would appear that conductors have, or formulate claims *as if* they had, access to other things. What is to be meant by "access" must await further results of epistemological inquiry.[2] If it should be the case that there are dependable claims, and should it be the case that the epistemologist can come to recognize the dependable ones, then he may be able to use them in an account of what "access" means. But he would be unwary to attempt selection at too early a stage. Provisionally, in view of the fact of inquiry, the epistemologist might assume—pending further results—that things other than the conductor exist. At any rate many claims suggest this. He might assume that, since conductor things make so many claims purporting to report the natures of other things, there are interactions or inter-relations between the conductor thing and other existents. Access to things may mean this much. To question this assumption might well be regarded as preposterous by common-sense folk and scientists—but then these have better sense than to concern themselves with epistemology. The assumption is supported by the fact that many claims refer to things as related or influencing one the other. Fire warms water, for example. Finally, in further justification of the assumption of access, it should be noted that many claims in various knowledges are made, not about the conductor alone as a referent, nor about other existents as referents, but about the conductor-in-relation-to-

[2] It is, of course, possible that the conductor alone exists. Then all claims purporting to refer to existents other than the conductor would be in some sense illusory. On the other hand, there may exist other things, while conditions might be such as to render nugatory any effort to establish a warrantable correlation between natures represented by symbols and the natured existents concerning which the claims are advanced. Descartes, of course, expressed this with magnificent rhetoric in the supposition that existence lies under the dominion of a malign genius. Of course, if no way could be found for guaranteeing the possibility of warrantable correlations, or, if it be concluded that nothing but the conductor exists, then anthropocentric sciences must undertake to make claims concerning what does exist (the conductor), with the purpose of explaining what it is that the conductor's claims do refer to when he supposes that they refer to existents other than himself.

other-things as the referent. Moreover, claims of this type eventuate from scientific inquiry activities. "Access" suggests one source of control to which the conductor must submit.

If the epistemologist look at an array of claims, he may note how claims seem to be modelled after other claims. That is to say, claims concerning existents are made up by taking advantage of what other claims purport to report about (alleged) existents.[3] The sun has satellites in orbital movement about it. Then claims concerning the atom may be advanced which in effect report that something similar to the sun-satellite system obtains with respect to atoms. Light may be likened to a hail of particles, or to waves. One may be warned that the electron should not be likened to a nice round smooth billiard ball, but rather to a tentacled octopus. The change in pitch of the locomotive whistle as it nears and passes, and shifts in the spectrum, are said to resemble one another. The components of chemical compounds are represented structurally in ways that remind one of things like children holding hands in play. Of course these comparisons become highly refined at the hands of scientists. Doubtless claims using more refined likenings affect other claims and lead to their refinement. There is some difference, it would seem, between Democritus' view that some atoms have hooks and the model of the biotin molecule pictured in newspapers. Empedocles' "Love" and chemical attraction differ. In the historical funds of claims, however, similarities are as notable as differences in the manner in which existents are reported to be alike or un-alike. At the present point we do not know what sets of claims are rightly to be called sciences or knowledges and what sets, say, superstitions or pseudo-sciences. We do not know what, in so-called sciences or knowledges, will later be regarded as science and what will be discarded as pseudo-science. In this condition, we can but note the way in which claims are built upon claims, borrowing one from another, and the way in which claims depend upon likenings. Certainly likenings are widely used by scientists in efforts to communicate to the inexpert. The use of analogy determines the character of myriad claims. Such claims suggest that the conductor has access to existents, and thereby secures materials for the making of symbols, representations, models, images. Many claims seemingly depend for their formulation upon the availability of reports concerning existents not directly the referent of the former. It is difficult to under-

[3] For the sake of brevity, qualifying words and phrases, such as "alleged" or "purport to report," are omitted, since they are to be understood wherever appropriate.

stand how atoms can be likened to a sun-satellite system unless there were reports concerning the solar system.

It is proposed to call this aspect of science, or scientific claims of this type, by the word "myth." The total fund of inquiry claims, then, consists largely of myth. If we assume that claims can be distinguished as warranted and unwarranted, as more or less dependable, as more or less well-attested, or as true or false, then presumably scientific myth-claims, or the mythical aspect of such claims as may have this aspect, will fall under these distinctions if and when their purport shall have been established. Myth, accordingly, has no derogatory meaning. Conductors of inquiry are then, at least on occasion, makers of myths. Whatever it takes, they have. If, then, conductors may be said to have rational souls because they are under the dominion of certain requirements that logicians talk about, then it may be said that they have myth-making souls. A myth-making soul must be attributed to the maker of claims, in so far as inquiry activity leads to myth-claims and these depend upon the nature of the conductor.

It must be recognized that an outraged maker of scientific claims might exclaim: "These myths, these analogies, these picture images, perceptual models, diagrams, symbols, representations, patterns,—these are not Science! It is conceded that we inquirers do use such things. But they are auxiliaries, helpful for inquiry activity and for communication of its results to the relatively uninstructed, such as philosophers. They are helpful because, having access to existents, we can use existents or aspects of existents in order to arrive at truly scientific claims concerning the way in which existents are natured. An existent may be so natured that, in given conditions, it may be usefully described as very like a stream of bullets from a machine gun; but it may also be so natured that, in other conditions, it may be no less usefully described as very like a wave. But the real scientific claim lies above and beyond these auxiliary claims. In these superior claims the nature of the existent is represented by symbols far removed from myth and the resources exploited in the making of myths. They say what a thing is, not what it is like. Thus there is Science, with a capital letter, within the total fund of claims." (Let us call Science with a capital letter, Science in this eulogistic and superior sense, by the term "*Scientia.*") Now what can an unhappy epistemologist reply to the expostulating maker of *Scientia's* claims? Perhaps crudely and circumspectly he may say: In the first place, the maker of *Scientia* seemingly has a soul superior to the myth-making one. What it takes, and what it takes by their own showing, the hapless epistemologist must admit

that they have. But it appears difficult to draw a line beyond which the claims are wholly free of the taint of myth. Moreover, just how does the claim-maker escape even the faintest trace of myth? Under the control of what, is he led to seek this escape? Is he, too, appealing to the small size of the baby? To achieve *Scientia*, we have gathered, he must win free of myth. Yet myth confessedly has been useful in the achievement. What happens when, having greatly profited by myth, he repudiates myth and formulates the authentically scientific claim? *Can* it happen? *Does* it happen? *How* does it happen? Evidently, he uses myth; evidently, he must not abuse it; evidently, he must not be dominated by it. His use of myths must be a *controlled use* despite the extent to which the myths exert a control over the formulation of claims.[4] Light is very like a stream of bullets; light is very like undulations in an undulatory medium. Now these myths are different. Their differences must not cancel their respective utilities. They are myths about one and the same thing. Yet it is exceedingly difficult to see how they can be "reconciled" by merely adding one to the other. A particle that behaves like a wave, and a wave that behaves like a particle: this is not a supermyth reconciling inferior myths, but a *tour de force*. In what sense is the *Scientia* of light, while myth-less, a reconciliation of myths? And, finally, why must myths be reconciled? Why not say that light *is* whatever *any* myth says it is? Why be choosey? The incomparable Plato bothered himself greatly with this, by asking how an *opinion could* be *wrong*. Why not say that it can't? If, however, our scientist says he must and he does escape myth, what sort of a soul has he, anyway, that enables him to accomplish this feat?[5] Uncle Remus, on one occasion, recognized that unless Brer Rabbit climbed a tree, there would be no further adventures of Brer Rabbit. He declared, despite the child's scepticism, that Brer Rabbit, being 'bleeged to climb the tree, had done so. Brer Rabbit must have had what it takes. So with conductors of inquiry. They do things far more difficult to understand than climbing trees—although some of them are sometimes said to be out on a limb.

[4] In the conditions indicated, the scientist in pursuit of science is in much the same predicament as the theologian. The latter, if he hasn't dogma, doctrine, formulation, hasn't anything much to talk about; if he merely points to the dogma, there won't be any theology; he must use the dogma and yet escape, if he can, mere servitude to the dogma. So the conductor of scientific inquiries; apparently he must use myths, and yet escape being controlled by myths.

[5] Aristotle says something to the effect that in using the imagination an inquirer is free, but in using the intellect he is not since he can not escape the alternative of truth or error.

It may be provisionally prudent to assume that inquiry conductors attain the making of claims in which no trace of myth is discernible. Sciences, then, taken in the global sense comprise *Scientia* together with all the claims marked by traces of myth-making or consisting of myths; the latter we may call science. Whether a claim of *Scientia,* once achieved, is ever discarded or modified we need not pause to inquire. Sciences seemingly do comprise claims that are discarded, modified, become outmoded, or have their myths refined.

Even the claims of *Scientia* are embodied in symbols.[6] These symbols are sometimes described as highly abstract. Precisely what this means is at present difficult to say. It is provisionally suggested that in part it means absence of close resemblances to existential matter-of-fact concerning which other claims are made.[7] Of course, if inquirers and their activities and the things they take advantage of in their activities are all bits of existential stuff amid the assemblage of such stuff which we have agreed to call nature, then it would not be astonishing to find that any bit of existential stuff has some resemblance, however attenuated, to every other bit. In *Scientia,* however, it appears that the resemblances between the symbols and the things concerning which sciences make varied claims are accidental. They seem incidental to the fact that conductors make symbols out of existential stuff. In *Scientia,* presumably, the symbols are not dependent as to their utility upon the nature of the symbol when the latter is regarded as a natured existent concerning which claims are made. The relation between *Scientia's* claims and their existential referent does not depend upon the stuff used in symbolizing the claims. There are claims to the effect that the octopus has tentacles. It may be said that we should regard the electron as somewhat like an octopus. This may be an auxiliary of *Scientia.* But the claim concerning the octopus apparently is not necessary in order to relate *Scientia* and natured existence. At any rate, the octopus-myth is to be discarded at some point. Yet assuredly some sort of correlation between the rarefied claims of *Scientia* and the myths of the sciences must obtain, or else the use of myth in fos-

[6] Whether a claim must be identified with the symbols in which it is said to be expressed, or whether the claim in itself is one affair and its expression in symbols a different affair, can not be considered within the limits of this essay.

[7] The equations of an Einstein do not closely resemble the picture of a scientist in a box, or an eddy in a river, or a merry-go-round. Of course, symbols are existential matter-of-fact concerning which physics and chemistry, or even biology, might make claims. Chemists, it is reputed, claim to know something about how chalk is natured.

tering inquiry activity, in arriving at unmythical claims, and in communicating such claims, will remain incomprehensible. It may be one thing to present claims in algebraic symbols, and another to speak of a scientist in a box: but why and how does a professed communicator of *Scientia* make effective use of the latter? He makes a controlled use of the myth. Once launched upon such a use, it appears that to a certain extent he is in turn controlled by the myth. After all, even conductors can't eat their cakes and have them too. Once it is proposed to take advantage of merry-go-rounds, for the sake of illustration, as they say, it would appear that the nature of merry-go-rounds must be adhered to. Of course, merry-go-rounds must be taken to be what claims concerning merry-go-rounds say that they are. Children might well be consulted. Just what would happen to a myth-maker dependent upon astronomical claims, were it to be the case that the so-called solar system isn't at all what astronomers claim it is, but something most unexpectedly different? How can the inquirer make a judicious use of myth without subjecting his activity to some measure of control by the myth? Control seems to spring from the natures of the natured existents providing the source-stuff of myth-making. These natures are reported, it may be, by children, perhaps by the common consent of mankind, or perhaps by professed conductors. This control arises because the conductor, being a thing amid things, has access to things. At any rate, sciences present claims to the general effect that conductors have eyes and by way of eyes make contact with things. It may be that such claims are well-attested. It would seem to be the proper objective of some sciences to secure dependable claims concerning the conditions in which inquiry conductors and everything else interact, and with what consequences. Doubtless such sciences will be replete with myths, and the epistemologist must proceed with caution in relying on such claims to further his inquiry concerning knowledge. The situation is one of extreme complexity. But taking the historical fund of claims in general survey, it appears difficult to deny that the mythical aspect of claims involves a control springing from the raw materials out of which the myths are made.

But do the raw materials represent the only source of control operative in the activities of inquiry? If *Scientia's* claims completely or almost win free of myth, this seem improbable. If, in making *Scientia's* claims, the maker exerts control over myths; if, while in some measure being guided by myth, he nevertheless is able to revise it, to define its limitations, and even to abandon it after having been helped by it: then it is powerfully suggested

that another source of control is indicated. If not located in the materials of myth, the other control may well be located in the maker and user of myths. In the case of pottery, what can not be explained by referring to what sciences define as the nature of clay is apt to be referred to the pot-maker. Subject to critical examination later on, and to necessary amendment, the epistemologist might urge a tentative position somewhat as follows: In the inquiry activity, there seems to be a tension between two poles. The one pole is pointed to by saying that the conductor has access to things, and thus secures stuff for the making of myths. The other pole seems to be located in the conductor. The claims of sciences and of *Scientia* appear to result from or to be conditioned by the tension between the poles. On the principle of the undergraduate, the conductor must have what it takes, if the claims of sciences and *Scientia* are what they seem to be. Granting this, just what *does* it take? The procedure being followed implies that the question must be answered, if answerable, by scrutinizing claims. It is notable that conductors use reports concerning natured existents already accumulated. He may use them in the making of myths. But he may use them, it seems, in order to arrive at claims concerning existence which include in their scope the natured existents reported in the used claims. Claims vary in what may be called amplitude. Myths are made that appear to embrace subordinate myths, in that the latter were used in arriving at the former. If the claims of *Scientia* are what we are assuming them to be on the assurances of our imaginary outraged scientist, then the tension between the two poles operates even in the case of *Scientia's* claims.

If the conductor has what it takes, and he attains a position as lofty as *Scientia* suggests, he must have a capacity for rising above myth-making. Consider again the wave and particle representations of the nature of light. Let it be assumed that these are myths or claims involving mythical elements. That is to say, they reflect the control exerted over the conductor by the stuff available for myth-making in virtue of his access to stretches of natured existence. On the report of conductors, it would appear that each myth has at least a limited warrant and a utility of its own. Each is anchored in natured matter-of-fact. One myth may be serviceable when the other is not. One may be more generally serviceable than the other. In reference to the myths, a conductor might urge that the natured existent ("light") may be regarded as a particle that behaves like a wave and a wave that behaves like a particle. Such a statement implies that the myths are taken seriously. It also implies that they are not to be taken

too seriously. The statement offers, however, not a reconciliation or adjustment of one myth to the other, but rather a description of the irreconcilability and lack of adjustment. Suppose, now, it is the case that *Scientia* contains claims concerning the way in which light is natured, and that these claims are so substantiated that scientists have little patience with doubts which an epistemologist might express. *Scientia* was attained at least not independently of myths concerning waves and particles. *Scientia* does not imply the repudiation of the latter. It implies, rather, a controlled use. In achieving *Scientia,* assuredly, the capacities and resources of the conductor are displayed. He has been active under a bipolar tension. There seems to be something in the conductor—to parody a famous dictum—that was not first in the stuff of myths.[8]

Let us grant, then, the distinction between *Scientia* and sciences. Grant that the making of claims is governed, not only by the materials of myth, but also by forces that seemingly would not be operative were there no conductors of inquiry and if the conductors were not what they appear to be as revealed in the claims achieved. Now claims represent in symbols the natures of existents. In so far as some claims, or some factors in the making of claims, depend on forces exerted from the conductor pole of inquiry activity, this control may be viewed in two ways. First, it implies powers residing within the conductor. Let us suppose that the conductor is conventionally identified as a human being. Men, as natured existents amid existents, can be taken as objects of inquiry. There arise anthropocentric sciences. They are anthropocentric in the sense that they would not come into being if these things called men were not supposed to exist and could not be distinguished from other supposed existents. If, then, such

[8] The verbal situation is difficult. Doctrines historically identifiable as "innate ideas," "metaphysical first principles," "natural premises of reason," "categories," "*a priori* principles," and even Hume's appeal to habit, seem to me to be attempts to reckon with the polarity indicated in the text. But in a merely tentative sketch, not of an epistemology, but of a possible approach to one, I would not care to identify the description undertaken with any particular historical doctrine. I am convinced that there exists no historical epistemology which did not frankly or surreptitiously add to the maxim:—there is nothing in the intellect that is not first in sense—the qualification, *nisi intellectus ipse.* In the text I am trying to suggest that the epistemologist, scrutinizing the claims of the sciences, must give some account of the meaning of the qualification. Moreover, I believe it to be the task of the *epistemologist,* not of a scientist, for the former must at least indicate to the latter what he must render intelligible in terms of the set of ideas defining the perspective of his science. I say, the task of the epistemologist; it is equally the task of the metaphysician, as previous discussion would suggest.

sciences come into being, soon or late they would concern themselves in varied ways with the powers ascribed to men in view of the control over myth apparently exercised by inquirers. One would expect claims to be made concerning these powers of control. There would thus be one or more sets of claims, made in the perspective appropriate to each anthropocentric science, concerning the conductor as a pole of the inquiry tension. Even these claims, concerned with the power of making and controlling the use of myths and of arriving at claims untainted by myth, might involve the making and using of myths. Now, on the other hand, the powers of controlled use of myth and of achieving unmythical *Scientia* could be viewed in the light of the (apparent) consequences. That is to say, the claims of inquiry, especially *Scientia*, could be scrutinized for the purpose of determining what there is in them that springs from the conductor pole of inquiry tension. The claims purport to report on the nature of what exists. This is the case even with the loftiest claims of *Scientia*. Because conductors have access to existents, and are existents amid existents, as the fact of inquiry presumes, the use of myths is provoked. It has been conceded that a myth can not be made and used in the making of claims without exerting a control over the activity. The claims, however, seem to show that a superior control is evoked in the process of claim-making. The claims are expressed in symbols representing the nature of existents. If there are claims untainted by myth, if the conductor is a source of control, if untainted claims report the nature of existence, then, it would appear, the control must be exercised by the use of natures, existential in reference, and yet superior to myth and its materials. The use of the materials in the making of myths would seem to depend upon factors not reducible to the natured materials. If the conductor invents symbols, he does this to represent natures. *Scientia* assuredly purports to report on existence. If *Scientia* lies beyond myth, and in final analysis defines the limited significance and use of myth, and dictates its abandonment, it would appear that inquiry activity is subject to an influence not to be accounted for by the conductor's access to things. His powers, whatever they are, lead him to focus natures of a superior order upon the fruits of this access. The control exercised by the conductor, considered as the other pole of the inquiry tension, is exercised on behalf of or in view of superior natures. Many questions arise here. What are these superior natures? In what sense are they due to the conductor? Is there any sense in which they are independent of the conductor? Or are they mere inventions, devices, of inquirers? Perhaps such questions could be

examined in the perspectives of various sciences—psychology, say, or physiology, or anthropology—with resultant claims expressing the perspectives. In at least some historical philosophies, the questions would have metaphysical significance.

There are many sciences or knowledges. Perhaps all aspire to achieve *Scientia.* Each presents instances of the fact of inquiry. Each represents the inquiry tension. Now it would be extraordinary if the conductor's control in one science bore no resemblance whatever to that exercised in another. There *may* be lines of cleavage in the collection of natured existents referred to by knowledges. These cleavages *may* be so profound that knowledges can not be brought together in one knowledge. It *may* be that no general harmonization of the myths of all knowledges can ever be attained. It *may* even be the case that *Scientia* for one set of knowledges may be unrelatable to *Scientia* for another set. But the borrowing and lending of myths, the use of the claims of one knowledge to assist in making the claims of another knowledge, the mutual reinforcement of claims, even of myths, the historically persistent similarities of myths, the essentially revisional process in accumulating funds of claims, with selection, rejection, and reorganization, all of this suggests not only similarity of access to things but also similarity of controlling factors employed by inquirers. There would seem to be a fund of superior natures to which the many conductors have access because of powers they have in common. If it be claimed that these superior natures are only superior symbolic inventions, at any rate the fact of similarity in the control is a part of the total fact of inquiry. Whatever these superior natures are, however they might be accounted for in the perspectives of sciences, whatever they may be in terms of a metaphysical reckoning, if anything deserving this stately name be possible, at least their functioning must be admitted. To represent the fact that they do not seem to be reducible to myths or the materials for myth-making used in the several knowledges, we may call them *meta-scientific* natures.[9] They may be said to

[9] If one were convinced that a definitive philosophy had been provided—by Plato, or Thomas, or Descartes, or Kant, or Hume, or some other—then one could adopt from the definitive philosophy a term indicating how that philosophy would interpret "meta-scientific natures." In similar fashion the sources of control in the inquiry process could receive a corresponding interpretation. But it has seemed prudent to avoid terminology that can be dis-associated from historical philosophies only with great difficulty. Accordingly, "mind" and "sense-data," and "perception," and similar words have been avoided, despite the awkwardness resulting. Similarly, with respect to "meta-scientific natures," it seems prudent to avoid the appearance of commitment to a type of philosophy historically identifiable.

define meta-scientific perspectives upon collections of existents or perhaps upon all existents.

Sciences and *Scientia* are sets of claims reflecting a system of tensions. Inner tensions operate within an outer. The outer seems to arise because the conductor has access to things, is driven to myth-making and is guided by myths, but at the same time reduces myth to an instrumental and procedural function because he uses meta-scientific natures to which he somehow has access. The inner tensions arise because the activity is largely governed by an historical accumulation of claims. The accumulation, even if highly organized, harbors antagonisms. Claims eventuating from inquiry continually set up waves of reorganization within the fund. Now what we have called meta-scientific natures, whatever they are, are used in claim-making. If metaphysics be acceptable as a name for this operation with meta-scientific natures, the nature of metaphysics will, of course, depend upon findings concerning these natures. If the findings in one philosophy differ widely from those of another, then the meaning of metaphysics will differ from the one to the other.[10] In any case, however, metaphysics will appear as a constituent in the sciences. Such knowledges will be viewed as arising through the interaction of metaphysics and myth. *Scientia*, if rising above myth and yet achieved not without the use of myth, would appear to be impossible without metaphysics. If the proponent of *Scientia* declares that he goes his way ignoring metaphysics, this can be only because he is so largely assuming metaphysical perspectives.

It is tempting to bring this essay to a close at this point, in the hope of avoiding a challenge to provide samples of meta-scientific natures. Or, failing that, the request may be made for indications of how competent philosophers could go about finding them. Hesitantly, one could suggest that the epistemologist examine the funds of claims accumulated in the total history of inquiry, the abandoned claims no less than those operative today. Claims are made; they have their day in court; many are discarded; some persist but only in revised forms, reappearing in new guises and in the company of new claims; some few, perhaps, remain as

[10] Since the meta-scientific natures are used in reports concerning existence, then, if metaphysics should be possible, presumably metaphysical claims concerning existence would be peculiarly concerned with meta-scientific natures, while epistemology, in so far as it may be the study of the resources of conductors *qua* conductors, would be equally concerned with them. But the present essay seeks only to suggest an approach to epistemology. Nothing more can be urged than this: *if* the essay has any force, then the reason may be clear why historical philosophies contain doctrines accounting for meta-scientific factors in their several ways.

fixed achievements. It seems reasonable to expect that the competent could discern factors governing the process. Claims come to be classified as respectably scientific or as pseudo-scientific. Similarities and revisional continuities may be discerned in the procession of the claims in time. It seems probable that history reflects something stable, recurrent, persistent, continuous, within existence itself. Access to things would elicit in conductors similarities in myth-making and similarities in meta-scientific natures to be used in the control of myth. In turn, the meta-scientific natures would define tendencies to look at existents in perspectives. Conductors and children, as things amid things, granting some measure of similarity in conductors and children, and in the things to which they have access, may have similar materials for myth-making in this century or in that. But similarities of myth would suggest also persistent controls on the part of conductors and children. Perhaps—no, probably,—now and then a peculiarly helpful myth is formulated. Democritus seems to have invented a remarkable one. Granular bits of salt disappear when put in water. What becomes of them? Did they pass into nothingness? Democritus seems not to have thought so. Because the water now tastes salty? Or because the venerable Parmenides advanced meta-scientific considerations? Or because of both? Democritus—and children would agree with him—decided that the matter-of-fact could be understood if there were holes in the water and the bits of salt hid in them. Doubtless the beautiful structural patterns of today's chemist are far away from Democritus. But salt still disappears when put in water—at any rate many conductors accept claims of that sort. The myth, revise Democritus as you will, must be constructed in accord with the stuff out of which it is made and with the existents about which claims are made by means of the myth. But one can not bring Brer Rabbit to an untimely end and then recount his later adventures. So with salt. The myth that accounts for its disappearance must also account for its reappearance. Thus a sufficiently learned philosopher, learned concerning *Scientia* and sciences throughout their history, might discern the meta-scientific perspectives controlling the making and using of particle-hide-and-go-seek myths. He might do the same with the never-never-land myths, used by conductors, which tell what would happen and must happen if something that can never be the case were the case—happenings in a perfect vacuum, the career of a solitary particle in motion in otherwise empty time and space, a purely economic man, men in the State of Nature. There seem to be families of myths. For example, man as consisting of soul and body, mind and matter,

myths—the pilot in the ship, the extraordinary behavior of the pineal gland, the parallelism of the psychical and the neurological. It appears highly improbable that myths are discarded, or revised and re-revised, solely because of the contribution to inquiry tension arising from the materials accruing from access to things. The historical accumulation of myths appears vast. If scientists retained all of them, and declared that they are equally likely stories, it is difficult to see how *Scientia* is achieved, and still more difficult to see what there would be for epistemologists and metaphysicians to do. History, however (although it is a set of claims not without elements of myth), suggests that inquirers are choosey. They become quite angry concerning one myth, at least now and then, and make new ones. It should be possible to discover what conductors use in rejecting, revising, inventing, and employing myths. If the effort to discover these be the duty of the philosopher, it would appear that he must be metaphysician no less than epistemologist.

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BOOK REVIEW

George Herbert Mead. Philosopher of the Social Individual. Grace Chin Lee. New York: King's Crown Press. 1945. vii + 100 pp. $1.50.

This essay is very useful; it expounds systematically and succinctly Mead's philosophy, beginning where Mead ended his thinking (with the theory of present perspectives) and ending where he began (with the psychology of the social self). Every reader of Mead knows that in reading him he must work himself out of a problem in almost every sentence, certainly in every paragraph. Mead's mind worked along with his pen; his reader, therefore, has the exceptional opportunity of working with a philosopher, instead of enjoying the product of his work. But following Mead's mind in act is laborious and at times baffling. The author of this essay has put Mead's ideas together logically and has done it so skillfully and conscientiously that the result is an orderly system of ideas which retain the qualities of confusion and tentativeness in which Mead left them. She has not attempted to answer questions which Mead left unanswered; the clarification which she has brought to Mead's philosophy stems not from the analysis of his ambiguities, but from her ability to restate the systematic arguments in Mead's

writings without the profusion of his explorations. The reader and reviewer of her essay can, therefore, detect with relative ease certain basic problems that emerge from Mead's philosophizing, whereas in Mead's own writings they are obscured and haunt the uneasy reader to the point of distraction. At least this has been my experience, and I am glad to have the opportunity in reviewing this essay to ask for more light on a few points that have troubled me persistently not only in reading Mead but in trying to understand what pragmatic empiricism is doing to nature and to the theory of natural existence. The most serious of these points have been discussed thoroughly by Professor Arthur Murphy [1] and I am therefore content to recall them summarily, rather than to exhibit them in detail.

We begin with the present, a starting point which is, of course, obligatory for an empiricist but which should recommend itself readily to anyone who has a practical interest in intellectual sobriety. There is no such thing as the present, says Mead. There are many presents "slipping into each other" and thus creating "passage." Whatever is real is real only to, for, and in a present. Each present, being the locus of reality, is objective. Through language and other forms of sociality the passages of many presents are correlated and translated. This activity of correlating and translating perspectives, which is one of many types of "living processes," determines a "consentient set" or environment. Compared with the indetermination of individual presents, the environment exists in an abstract, relatively changeless space and time, a field of stability within which individual changes or emergents can be judged, measured, and controlled. "The perspectives or percipient events as a totality constitute nature" (p. 23).

In this bundle of propositions we certainly have the makings of a philosophy and of a metaphysics. But before we can proceed much further we must know clearly what is here being asserted and what the aim of metaphysical activity is.

Is Mead here doing pragmatically what Whitehead has done realistically, viz., showing that the analysis of human experience is at the same time an analysis of natural existence? Mead's position is certainly ambiguous. In many of his essays he seems to be explicit in asserting that "the philosophy of the present" and "the philosophy of the act" are an analysis of *human* existence. He distinguishes between an act or a "living process" (he seems to use "process" only for the behavior of living beings) and other forms of motion. "A process that lasts I have defined as an event extending throughout a duration as a whole and merging into the future

[1] "Concerning Mead's *The Philosophy of the Act*," this JOURNAL, Volume XXXVI (1939), pp. 85–103.

in adjustment to what occurs" (*Philosophy of the Act*, p. 345). The point of this definition and of many similar statements seems to be that the kind of process that lasts or constitutes presents can be distinguished from other types of succession or "temporal extension." Not every emergent event is an act, nor is every temporal distance a present. But occasionally Mead speaks in the manner of Whitehead as if perspectives were not confined to what we ordinarily understand as living organisms and their environments. It is true that in his essay on the "Perspective Theory of Perception" (*Philosophy of the Act*), where Mead refers to "a structure of energy particles" as a perspective and where he interprets the "physical existence" of electrons, masses, and other objects of physical existence as if it could be described in terms of acts and presents, he is nevertheless discussing the relation of physical structures to perception and defining not their existence in nature but their reality to a present. But in raising the question, "How does a perspective appear as such in experience?" he seems to imply, even if he does not explicitly assert, that the natural existence of a perspective can be distinguished from its meaning or reality in human experience. Certainly he distinguishes occasionally between what a thing is "in nature" and its reality in or for experience. And the context usually suggests that when Mead (and Miss Lee) speaks of perspectives "constituting" nature, they mean that in experience the meaning or concept of nature is constituted by perspectives. In other words, I do not think that Mead intended to assert that nature exists in our perspectives, but merely that the scientific object of knowledge is a public construction through language out of private perspectives.

There are several alternative ways of clarifying these ambiguities in Mead's philosophy. He could maintain, as a pragmatist, that there is no *problem* of existence apart from the way in which things exist for human perspectives, and that the *theory* of existence may therefore be identified with the *theory* of how things are experienced, whether or not existence and experience can be identified. He could maintain, as an empiricist, that his philosophy is a theory not of the existence of immediate or active experience in nature, but of the meaning of nature (among other things) in experience; he could thus discuss all things in the context of behavioristic teleology. He could maintain, as a naturalist, that there is an emergence of presents, acts, perspectives, mind, teleology in the course of temporal events, that the natural emergence and operation of this type of being can be distinguished from other structures and processes, and that reality for human historical existence can be distinguished from an existence in space-time which is not char-

acterized by presents with their pasts and futures. He could, like Whitehead and the editors of *The Philosophy of the Act*, maintain that in addition to the environment of human perspectives there is a "cosmological environment," that there are perspectives of inorganic as well as of organic phenomena, that physical and teleological existence are not different, that the world of events and the world of acts are alike "social," that organisms are not granted a privileged place in "empirical cosmology," that "the most general characteristics of existence must be consistently interpreted as characteristics of both perceptual objects and scientific things," that "all space is but an extension of the space found in the contact perspective of the manipulatory phase of perceptual things," and, in general, that a theory of existence in experience is at the same time a theory of existence in nature. Mead might intelligibly develop any one of these positions, but in asserting all of them he makes none of them clear.

It seems improbable to me that Mead was engaged, as the last alternative I have mentioned suggests, in constructing what the editors of *The Philosophy of the Act* call an "empirical-pragmatic-naturalistic cosmology." Such an enterprise is too evidently a metaphysical medley to attract so single-minded a thinker as Mead was. It seems plausible to me that he intended to pursue a philosophy of "acts" and their "situations" to its furthest reaches, never losing sight of that particular context, and that this enterprise might yield a novel but significant theory of reality. But to regard it also as a theory of natural existence (which type of existence, I think, Mead really took for granted) and a cosmology (in which, I think, Mead was not interested) is to make confusion worse confounded. It is bad enough to read in Mead that the world is a world of "events," a world of "situations," a world of "acts," a world of "presents," without taking each of these statements out of its context and trying to reconcile all in a metaphysical system.

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PHILOSOPHIC ABSTRACTS. Volume V, Number 19–20.

NOTES AND NEWS

We regret to learn of the death of Joaquin Xirau, Professor of Philosophy at the National University of Mexico, last month in Mexico City, at the age of 51.

We regret to learn of the death of Rudolf Kagey, Assistant Professor of Philosophy at New York University, on May 14, 1946, in New York City.

The establishment of the Barnes Foundation Professorship of Philosophy at the University of Pennsylvania has been announced. Roderick M. Chisholm, recently released from the army, has been appointed to the post for an initial period of three years. Under the new professorship, which is supported by the Barnes Foundation, a course dealing with the relationship between philosophy and art will be conducted by Dr. Chisholm in the gallery of the Barnes Foundation and will be open in the fall to students enrolled at the University.

Charles L. Stevenson, formerly Assistant Professor of Philosophy at Yale University, has been appointed Associate Professor at the University of Michigan.

Mason W. Gross, Instructor in Philosophy and Assistant to the Dean of Columbia College, has been appointed Assistant Professor of Philosophy and Assistant to the Dean of the College of Arts and Sciences at Rutgers University.

James Street Fulton, formerly Assistant Professor of Philosophy at McGill University, has been appointed Assistant Professor of Philosophy at Rice Institute, beginning next September.

We print the following notice from K. R. Shaffer, Executive Director, American Book Center, Inc., Library of Congress:

During the war, the libraries of half the world were destroyed in the fires of battle and in the fires of hate and fanaticism. Where they were spared physical damage, they were impoverished by isolation. There is an urgent need—now—for the printed materials which are basic to the reconstruction of devastated areas and which can help to remove the intellectual blackout of Europe and the Orient.

There is need for a pooling of resources, for coördinated action, in order that the devastated libraries of the world may be restocked as far as possible with needed American publications. The American Book Center for War Devastated Libraries, Inc., has come into being to meet this need. It is a program that is born of the combined interests of library and educational organizations, of gov-

ernment agencies, and of many other official and non-official bodies in the United States.

The American Book Center is collecting and is shipping abroad scholarly books and periodicals which will be useful in research and necessary in the physical, economic, social, and industrial rehabilitation and reconstruction of Europe and the Far East.

The Center can not purchase books and periodicals; it must depend upon gifts from individuals, institutions, and organizations. Each state will be organized to participate in the program through the leadership of a state chairman. Other chairmen will organize in the principal subject fields. Coöperation with these leaders or direct individual contributions are welcomed.

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